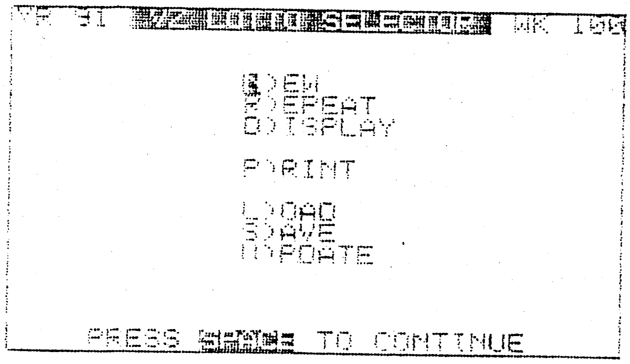
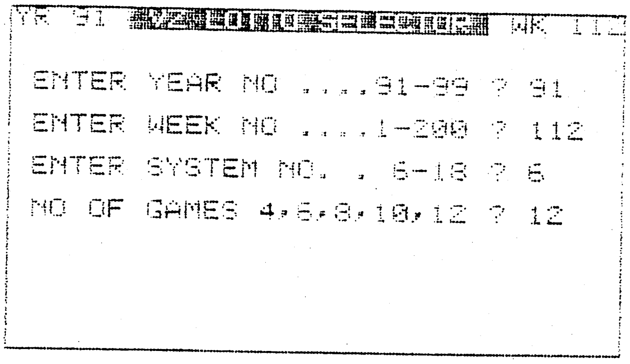
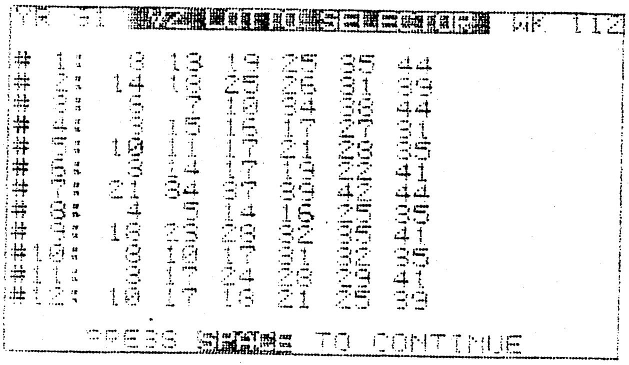
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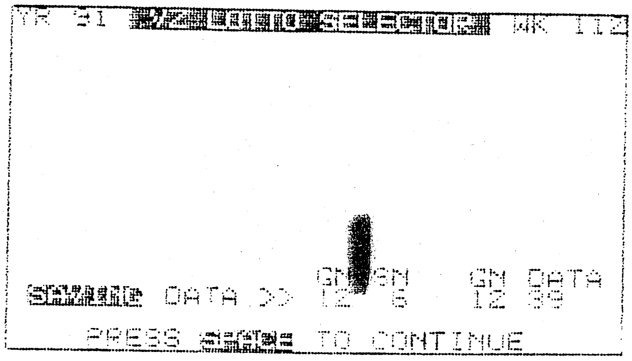
VZ 200/300

HUNTER VALLEY VZ JOURNAL









PRODUCED BI-MONTHLY BY H.V.VZ.U.G.
A NON PROFIT ORGANIZATION

** EDITOR'S COMMENTS **

HELP - SELL & TELL — PAGE 3

HELP- ARRAY/RESTORE PROGRAM * SPEEDY RECOVERY HARRY HUGGINS * CORRESPONDENCE TO THE EDTOR * INTRA/INTER STATE VISITORS * DOS & DRIVE BASICS QUESTIONS AND ANSWERS.

HISTORY OF AUST. AND NZ VZ USER GROUPS BY BOB KITCH — PAGES 4-5

BOB HAS GONE TO SOME LENGTHS TO CHRONICLE THE VZ MOVEMENT BOTH PAST AND PRESENT. WELL DONE BOB.

INVESTIGATING VZ SOUND PART III BY BOB KITCH — PAGES 6-8

BOB CONTINUES HIS SERIES ON VZ SOUND GENERATION. RELEVANT SOUND PROGRAMS IN NEXT ISSUE.

WAVZ USER GROUP AT WORK — PAGE 9

IF YOU WANT TO KNOW WHAT THE WESTRALIAN VZ'DERS ARE UP TO THEN TURN TO PAGE 9 AND READ ON.

ETI 1611 PROGRAMMER UPDATE BY HERMAN NACINOVICH — PAGES 10-12

I SENT OUT SEVERAL COPIES OF LAST ISSUE WITH ETI 687 HEADING INSTEAD OF ABOVE. MY APOLOGIES. I MANAGED TO COMPRESS 7 PAGES TO 3 FOR THIS ISSUE SO ONLY 3 PAGES LEFT AND 2 X 43 CENT STAMPS WILL GET THEM TO YOU BEFORE NEXT ISSUE. ED.

MODS TO DSE DISC D'BASE PART III BY JOHN D'ALTON — PAGES 13-15

JOHN CONTINUES WITH ROUTINES FOR SEARCHING BY ANY FIELD AND PRINTING FIELDS IN ANY ORDER.

VZ NSW LOTTO SELECTOR BY PAUL AND JOE LEON — PAGES 15-17

I STARTED THIS PROGRAM WITH MARK SIX FROM VZ300 MAIN UNIT MANUAL AS A DEMONSTRATION ON DISK FUNCTIONS TO CARRY ON DOS BASICS. BY ADDING THIS ROUTINE AND THAT IT GREW TO BECOME A PROGRAM IN ITS OWN RIGHT. QUITE A LOT CAN BE LEARNED FROM THIS PROGRAM LIKE SCREEN FORMATTING NUMBERS, USING ARRAYS, ERROR CHECKING, ETC.

VZ DISK FILER (CATALOGUER) VZ MODEM SOFTWARE AND FAST M/C DISASSEMLER SOFTWARE — PAGE 18

SOFTWARE FOR SALE - PATCH3.3 EXTENDED DOS & MENU-FILE COPIER — PAGE 19

USER GROUPS * NEWS * SUBS — PAGE 20

BELIEVE IT OR NOT:

ANOTHER PERSON WHO SHALL BE NAMELESS ANSWERED 'Y' TO THE QUESTION "INITILIAZE DISK Y/N ?", AND WHEN DONE FOUND DISK BLANK AND WANTED TO KNOW IF IT WAS SOME KIND OF VIRUS WHICH WIPED THE DISK.

DISCLAIMER: EVERY EFFORT IS MADE TO INSURE THE ACCURACY OF INFORMATION CONTAINED WITHIN BE IT GENERAL, TECHNICAL, PROGRAMMING, ETC. NO RESPONSIBILITY CAN BE ACCEPTED BY HUNTER VALLEY VZ USERS' GROUP OR AUTHOR AS A RESULT OF APPLYING SUCH INFORMATION IN PRACTICE.

HELP - ARRAY/RESTORE PROGRAM:

DOES ANYONE KNOW WHERE I CAN CONTACT W. OBRIST THE AUTHOR OF THE TAPE M/C ARRAY/RESTORE PROGRAM. LAST ADDRESS I HAVE IS IN WEST RYDE. I'M INTERESTED IN ABOVE PROGRAM AND IF ANYONE CAN HELP PLEASE CONTACT:

JOE LEON 22 DRURY STREET WALLSEND NSW 2287 (049) 512 756

SPEEDY RECOVERY HARRY HUGGINS:

THE ABOVE GENTLEMAN HAD AN ARGUMENT SOME WEEKS AGO WITH A LADDER, A TREE, THE GROUND AND HIS BODY AND NO GUESSES WHO OR WHAT LOST THE ARGUMENT. HARRY WAS REDUCED TO ONE FINGER TYPING WITH THE OTHER ARM IN A SLING. I'M GLAD TO SAY THAT HARRY IS BACK TO SPEED TYPING USING TWO FINGERS AGAIN, ONE ON EACH HAND. I WISH HIM A FULL RECOVERY.

CORRESPONDENCE TO THE EDITOR:

NORMALLY IT TAKES ABOUT A WEEK TO ANSWER YOUR LETTERS PROVIDED I'M NOT IN THE MIDDLE OF EDITING NEXT ISSUE WHEN IT TAKES A LONGER. PROGRAM AND TECHNICAL QUERIES CAN TAKE SOME TIME AS QUITE OFTEN A LOT OF RESEARCH AND PREPARATION IS INVOLVED WHICH QUITE OFTEN LEAD TO AN ARTICLE FOR THE JOURNAL. SO PLEASE BE PATIENT TILL I CAN GET AROUND TO REPLYING TO YOUR QUERIES. ED.

INTRA/INTERSTATE VISITORS:

I'VE HAD SOME EXPRESSIONS OF INTERST FROM MEMBERS WISHING TO VISIT AND AS I MENTIONED BEFORE YOU'RE ALL WELCOME. I MUST STRESS THOUGH, PLEASE CHECK BEFORE MAKING A LONG TRIP AS A COUPLE VISITORS CAME WHEN I HAD OTHER COMMITMENTS. AROUND MID APRIL I'LL BE HEADING MELBOURNE WAY TO VISIT MY ELDEST DAUGHTER FOR A WEEK OR TWO.

DOS AND DRIVE BASICS:

THAT WAS A GREAT ARTICLE ON DISK DRIVE BASICS. I'VE SEEN A FEW ATTEMPTS TO EXPLAIN THE DISK AND HOW IT WORKS, BUT YOUR ARTICLE IS THE CLEAREST IN MECHANICAL TERMS THAT I HAVE SEEN. THE EXPLANATION OF SECTORS AND TRACKS WAS THE CLEAREST I'VE COME ACROSS. GREAT WORK!

JOHN LUXTON

THANKS JOHN: LIKE ALL CONTRIBUTORS TO THE JOURNAL I GET SATISFACTION FROM KNOWING THAT SOME OF MY EFFORTS HAVE BEEN APPRECIATED. JOHN ALSO ASKS FOR CLARIFICATION ON PARTS OF ABOVE ARTICLES WHICH ARE:

QUESTION 1: DOES THE PRESSURE PAD PUT A DEPRESSION IN THE DISK LIKE YOUR ILLUSTRATION?

ANSWER: YES, BUT ONLY MINUTE SO IT SKIMS THE CORRECT DISTANCE WHICH IS MINISCULE OVER THE WRITE/READ HEAD. THE ILLUSTRATION IS GREATLY EXAGERATED TO CLARIFY WHAT HAPPENS.

QUESTION 2: LASERLINK DOS EPROM, DOES IT HAVE IT HAVE 1 SECTOR INTERLEAVE?

ANSWER: YES, IT DOES ACCORDING TO THE "FASTDISK" PARAGRAPH IN THE INSTRUCTION MANUAL. MY APOLOGIES FOR OMMITING THE INFORMATION IN LAST ISSUE, I COMPLETELY FORGOT ABOUT IT.

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A HISTORY OF VZ USER GROUPS IN AUSTRALIA AND NEW ZEALAND PART I BY BOB KITCH

THE FIRST ADVERTISEMENT FOR THE SALE OF DSE'S VZ-200 COMPUTER WAS IN ELECTRONICS AUSTRALIA JUNE 1983. THAT IS A LONG WHILE AGO, PARTICULARLY IN COMPUTING TERMS, FOR A SMALL AND CHEAP 8-BIT COMPUTER TO SURVIVE. SINCE THAT TIME MANY PEOPLE HAVE PURCHASED AND USED THE VZ-200, AND ITS UPGRADE IN JULY 1985, THE VZ-300.

USERS AND OWNERS OF THE VZ NATURALLY TENDED TO BAND TOGETHER, TO CHEW OVER MUTUAL INTERESTS AND PROBLEMS, IN MUCH THE SAME WAY AS OWNERS OF OTHER "BREEDS" OF COMPUTERS. THESE "JAM" SESSIONS WERE MOST OFTEN HELD OVER THE PHONE, BUT HAVE YOU EVER TRIED TO SATISFACTORILY DISCUSS A SOFTWARE PROBLEM OVER THE PHONE? THE NEXT STAGE WAS TO ORGANIZE A MEETING OF INTERESTED ENTHUSIASTS, USUALLY ON A WEEK-END, IN SOMEONES HOME OR AT A CONVENIENTLY LOCATED HALL. AND SO BEGAN "A VZ USER GROUP".

THE VZ WAS GREATLY ASSISTED BY ITS ORIGINS. THE VZ WAS REALLY A SOUPED-UP TANDY TRS-80 OR ITS CLONE, THE DSE SYSTEM-80. THESE TWO MACHINES WERE BASED ON A ZILOG Z-80 MICROPROCESSOR AND HELD A VERSION OF MICROSOFT BASIC IN ROM. (THIS IS WHAT GIVES A MICROCOMPUTER ITS DISTINCTIVE PERSONALITY) THESE MACHINES WERE RESPONSIBLE FOR THE COMMENCEMENT OF THE HOME AND PERSONAL COMPUTING BOOM - NO SMALL CLAIM.

IN 1983, THE VZ-200, MANUFACTURED BY VIDEO TECHNOLOGY IN HONG KONG, USED AN IMPROVED VERSION OF THE MICROSOFT ROM, OFFERED COLOUR AND SOUND, INCREASED MEMORY CAPACITY AND A LOW PRICE. A LOT OF TRS-80 AND SYTEM-80 OWNERS UPGRADED TO THE VZ. THESE GUYS OFTEN KNEW Z-80 ASSEMBLER AND THE WORKINGS OF THE LEVEL II ROM BACKWARDS! THEY ALSO BOUGHT A USEFUL SOFTWARE BASE TO THE VZ.

THE VZ COMPUTER QUICKLY GAINED A LARGE FOLLOWING AND WAS CLEARLY A MARKETTING SUCCESS FOR DSE. THEY CLAIM TO HAVE SOLD IN EXCESS OF 30,000 VZ-200. DSE'S SUPPORT FOR THE VZ WAS OFTEN FOUND WANTING - A VERY COMMON MOAN AMONGST USERS. THE VARIOUS USER GROUPS THAT SPRANG INTO EXISTENCE PROVIDED THE ESSENTIAL SUPPORT FOR THE VZ. WITHOUT THEM, THE VZ AND ITS USERS WOULD HAVE PROBABLY WITHERED AWAY AND GONE THE WAY A NUMBER OF OTHER SMALL COMPUTERS DID.

USER GROUPS USUALLY HAVE A SMALL BAND OF COMMITTED ENTHUSIASTS, WHO TEND TO CARRY THE ACTIVITIES OF THE GROUP. THEY PROVIDE THE CORE OF KNOWLEDGE THAT UNITES THE GROUP, FASCINATES AND NURTURES THE UNINITIATED TO COMPUTING AND POSSESS A RESTLESSNESS TO ACHIEVE MORE WITH THE VZ. THEIR REWARD SEEMS TO BE SIMPLY SEEING A NEW MEMBER BECOME A SUCCESSFUL USER. A FAIRLY NATURAL ACTIVITY TO FLOW FROM THIS GROUP, IS THE PRODUCTION OF A NEWSLETTER, TO SERVE FAR-FLUNG ENTHUSIASTS (REMEMBER THE TELEPHONE) AND TO RECORD DISCOVERIES (BE THEY HARDWARE TRICKS OR NEW PROGRAMS) FOR OTHER USERS.

A NEWSLETTER NEEDS AN EDITOR. THESE FELLOWS ARE THE GREATEST. THEIR CONTRIBUTION TO VZ COMPUTING AND THE USERS IS HUGE. THE AMOUNT OF INFORMATION RECORDED IN USER GROUPS NEWSLETTERS IS STAGGERING. SOME OF YOU MAY BE AWARE OF THE MAGAZINE ARTICLE, BOOKS AND SOFTWARE LISTS THAT ARE AVAILABLE. A SIMILAR LIST OF USER GROUPS AND THEIR NEWSLETTERS IS IN PREPARATION. YOUR ASSISTANCE IN ADDING TO IT WOULD BE APPRECIATED.

WITH THIS BACKGROUND THEN, I PROVIDE A BRIEF DISCUSSION OF THE VZ USER GROUP NEWSLETTERS WITH WHICH I AM FAMILIAR. I APOLOGIZE FOR ANY OMISSIONS, BUT WOULD APPRECIATE BEING MADE AWARE OF ANY SHORTCOMINGS.

HISTORY OF VZ USER GROUPS CONT.

1. DSE EFFORTS.

UNDOUBTEDLY, DSE'S WAS AWARE OF ITS POOR SUPPORT FOR THE VZ - WE TOLD THEM OFTEN ENOUGH! THEY HAD ALSO ENGAGED THE PROLIFIC TIM HARTNELL TO WRITE A SERIES OF BOOKS FOR THE VZ. TIM COMMENCED THE FIRST VZ-200 USER GROUP IN MID-1983.

HE PRODUCED 3 EDITIONS OF "VZ-200 INTERFACE" - THE OFFICIAL MAGAZINE OF THE VZ200 USERS' CLUB. THE LAST EDITION (#3) WAS ISSUED AROUND EASTER 1984. EACH EDITION WAS AROUND 8 PAGES AND FILLED WITH HINTS, BASIC PROGRAMS AND DSE ADVERTISEMENTS.

(AS A SAD ASIDE, AT THE TIME OF WRITING - FEBRUARY 1991 - I NOTICED IN A RECENT PAPER THAT TIM HARTNELL HAD SUCCUMBED TO CANCER AND PASSED AWAY AGED 40. TIM WAS A SIGNIFICANT CONTRIBUTOR TO THE VZ WITH HIS VZ-200 AND VZ-300 BOOKS.)

BY MID-1984 OTHER "PRIVATE" USER GROUPS HAD BEGUN TO FORM. DSE'S DROPPED "INTERFACE" AND BEGAN PRODUCING "COMPUT", A NEWSLETTER COVERING OTHER MACHINES SOLD BY DSE. FIVE EDITIONS WERE ERRATICALLY PRODUCED FROM AUGUST 1984 TO JULY 1986. MINOR ARTICLES ON THE VZ ARE INCLUDED.

I SHOULD MENTION HERE, FOR COMPLETENESS, THAT DSE'S ANNUAL CATALOGUE SINCE 1983 HAS CONTAINED VZ INFORMATION. THE RELEASE OF SOFTWARE AND HARDWARE ITEMS CAN BE TRACKED THROUGH THESE.

2. THE FIRST USER GROUP CLUB.

WHO SAID THAT VICTORIANS COULDN'T READ? IN EARLY 1984, MR. LUIGI CHIODO PRODUCED THE FIRST EDITION OF "OUTPUT". HE SUBSEQUENTLY CHANGED THE NAME TO "VISUAL DISPLAY UNIT".

I DO NOT HAVE A FULL SET OF HIS NEWSLETTERS. I HAVE #1 - #7. HOW MANY DID LUIGI PRODUCE? THEY CONTAIN A CONSIDERABLE AMOUNT OF DSE SUPPLIED MATERIAL AS WELL AS SOME OTHER INTERESTING CONTRIBUTIONS.

3. THE FIRST QUEENSLAND CLUB.

THE FIRST "PRIVATE" VZ USERS GROUP NEWSLETTER WAS PRODUCED BY MR. JOHN D'ALTON IN JUNE 1984. JOHN WENT ON TO PRODUCE 27 ISSUES OF "LE'VZ NEWS" WITH THE LAST IN MAY 1990. A MONUMENTAL EFFORT BY JOHN, PARTICULARLY WHEN CONSIDERED WITH HIS SOFTWARE SUPPORT, PROGRAM WRITING AND CHRISTMAS MEETINGS. IN ADDITION TO THE NEWSLETTER, JOHN PRODUCED A BOOK ON PROGRAMMING HINTS AND HARDWARE. THIS IS A MOST VALUABLE AND WELL PRODUCED SET OF NEWSLETTERS AND MOST ARE STILL AVAILABLE FROM JOHN AS BACK ISSUES.

4. A GROUP IN ADELAIDE.

IN JULY 1984, MR. JOHN WATERS OF CHELTENHAM IN ADELAIDE PRODUCED THE FIRST EDITION OF "VE ZEE NEWS". JOHN (PERHAPS WISELY!) INITIALLY SAID THAT HE WOULD ONLY PRODUCE 12 NEWSLETTERS. TRUE TO HIS WORD, HE PRODUCED 12 MONTHLY EDITIONS FROM JULY 1984 TO JUNE 1985. HIS NEWSLETTERS CONTAIN A LOT OF "MEATY" INFORMATION ON THE VZ. I SUSPECT THAT A NUMBER OF THE CONTRIBUTORS WERE EX-TRS-80 MEN. "VE ZEE NEWS" IS AN EXCELLENT COLLECTION OF NEWSLETTERS AND CONTAINS HARDWARE MODIFICATIONS AND SOFTWARE LISTINGS.

CONTINUED IN NEXT ISSUE . . .

LET'S INVESTIGATE SOUND ON THE VZ PART III BY BOB KITCH

IN THE LAST TWO ARTICLES, WE PLAYED AROUND WITH THE SOUND COMMAND IN THE BASIC INTERPETER AND ALSO GOT INTO THE BEEP ROUTINE (USING THE USR COMMAND) IN THE VZEDS ROM. I HAVE ALSO PROVIDED A BRIEF OUTLINE OF THE MANNER IN WHICH SOUND IS GENERATED, THE COMPONENT PARTS OF A SOUND WAVE-FORM AND THE LIMITATIONS ON SOUND GENERATION ON THE VZ.

IN THIS ARTICLE I WILL PRESENT A "FULL-BLOWN" PSUEDO-ASSEMBLER ROUTINE TO FULLY EXPLORE THE SOUND GENERATING CAPABILITIES OF THE VZ. THE I/O LATCH AT 6800H IS DIRECTLY CONTROLLED - THE SOUND ROUTINES IN ROM ARE NOT USED. THE MACHINE CODE IS CALLED UP BY A BASIC PROGRAM THAT ALSO PASSES THE NECESSARY PARAMETERS TO THE LOW-LEVEL PROGRAM. THE TONEGEN PROGRAM IS A GOOD EXAMPLE OF LINKING MACHINE CODE TO A BASIC PROGRAM - A TECHNIQUE THAT I CALL FAST BASIC. IT IS AN EXCEPTIONALLY POWERFUL PROGRAMMING TECHNIQUE TO GET THE UTMOST IN PERFORMANCE FROM THE VZ AND WAS ALSO USED IN MY LIVENUP GRAPHICS SERIES.

AN IDEAL SOUND GENERATING ROUTINE.

IN THE PREVIOUS ARTICLES, I HAVE MENTIONED SOME OF THE SHORTCOMINGS OF THE VARIOUS METHODS OF GENERATING SOUND ON THE VZ. AN IDEAL SOUND GENERATING ROUTINE SHOULD:

-HAVE THE ON AND OFF INTERVALS INDEPENDANTLY VARIABLE. THIS IS THE CAPABILITY TO VARY THE "DUTY CYCLE" OF THE SOUND AND ALTERS THE "TIMBRE".

-HAVE THE ABILITY TO CONTINUOUSLY VARY THE TONE TO OBTAIN SOUND EFFECTS RATHER THAN JUST "NOTES".

-HAVE THE TONE DURATION PRESETTABLE, BUT NOT NECESSARILY INDEPENDANTLY.

-BE ABLE TO BE CALLED FROM BASIC (VIA THE USR COMMAND) AND HAVE THE PARAMETERS PASSED FROM BASIC. (BY POKEING INTO A TABLE.)

-BE INDEPENDANT OF BASIC AS IT IS TOO SLOW FOR AUDIO-FREQUENCY HANDLING. THIS WAS A LIMITATION TO THE PROGRAMS PROVIDED SO FAR.

-BE RELOCATABLE WITHOUT THE NEED FOR RE-ASSEMBLY SO THAT IT CAN BE INTERFACED WITH OTHER PROGRAMS.

THIS LOOKS LIKE A PRETTY FORMIDABLE PROGRAMMING SPECIFICATION! THE FIRST THREE CRITERIA ARE ACHIEVED BY PROVIDING SUITABLE PARAMETERS TO THE ROUTINE. THERE ARE FIVE IN ALL:

-ON INTERVAL -OFF INTERVAL -ON INCREMENT -OFF INCREMENT -TONE DURATION

THESE "SPECIFY" THE SOUND ENVELOPE TO BE FED TO THE I/O LATCH. IN ESSENCE, THEY ARE REALLY TIMING LOOP CONSTANTS FOR THE MACHINE LANGUAGE PROGRAM.

THE LAST THREE CRITERIA ARE DEALT WITH BY SUITABLE PROGRAM DESIGN AND IMPLEMENTATION. CLEARLY THE ROUTINE MUST BE WRITTEN IN MACHINE CODE. I HAVE CHOSEN TO ENTER IT AS A SERIES OF DATA STATEMENTS (IN PSUEDO-ASSEMBLER FORM) FROM THE BASIC PROGRAM. IT COULD EQUALLY WELL BE ASSEMBLED USING THE ED/ASM. UNLIKE THE OTHER PROGRAMS PROVIDED IN THIS SERIES, ONLY ONE CALL FROM BASIC PER SOUND, CAN BE TOLERATED, SO THAT GOOD AUDIO IS OBTAINED. THIS REMOVES THE ANNOYING "CLICKING" THAT OCCURS WHENEVER THE PROGRAM PASSES BACKWARDS AND FORWARDS BETWEEN BASIC AND MACHINE CODE.

THE REQUIREMENT FOR RE-LOCATABILITY NECESSITATES A FEW EXTRA PROGRAMMING TRICKS SO THAT PARAMETERS CAN BE PASSED FROM THE BASIC PROGRAM TO THE MACHINE CODE. THIS IS TAKEN CARE OF IN THE PROGRAM HOWEVER BY THE USE OF TEMPORARY POINTERS STORED IN TWO-DIMENSIONAL ARRAY VA%. AS IS MY USUAL PRACTICE, I PLACE MACHINE CODE IN A PROTECTED TOP-OF-MEMORY POSITION - A PROCEDURE THAT I AM SURE MOST OF YOU ARE FAMILIAR WITH.

ANOTHER USEFUL FEATURE THAT I HAVE INCORPORATED INTO THE PROGRAM, IS THE ABILITY TO RECORD THE SOUND EFFECTS ON THE VZEDS CASSETTE RECORDER. REMEMBER IN PART I, I MENTIONED THAT THE I/O LATCH ALSO CONTROLS THE CASSETTE PORT? TO USE THIS FACILITY, JUST RECORD ON THE CASSETTE AS THE SOUNDS ARE BEING CREATED. THEY CAN BE PLAYED BACK ON ANY SUITABLE "GHETTO-BLASTER"!

TONEGEN PROGRAM.

THE PROGRAM IS QUITE EASY TO ENTER, BUT DOUBLE CHECK THAT LINES 1010 TO 1320 ARE CORRECT. TO GAIN A BETTER UNDERSTANDING AS TO HOW THE RE-LOCATABILITY AND PASSING OF PARAMETERS WORKS, A DEBUG DUMP IS PROVIDED BY REMOVING THE REMARK FROM LINE 670. A PERUSAL OF THE RESULTING PRINT-OUT SHOULD CLARIFY THE METHOD USED.

THE PARAMETERS ARE DIRECTLY POKED INTO A 10 BYTE TABLE RESERVED ABOVE THE MACHINE CODE HELD IN TOP-OF-MEMORY. THE PROGRAM OCCUPIES 60 BYTES AND THE TABLE OCCUPIES 10 BYTES OF THE 99 BYTES RESERVED FOR USE. THE BASIC PORTION OF THE PROGRAM IS WELL COMMENTED AND SHOULD BE FAMILIAR TO MOST. ALL OF THE REMARKS CAN BE OMITTED IF YOU DO NOT WISH TO ENTER THEM.

THE "WORKING" SECTION OF THE PROGRAM IS THE MACHINE CODE AND THE PSUEDO-ASSEMBLER PROVIDED (LINES 1010 TO 1320) OUTLINES THE MANNER IN WHICH THE SOUND EFFECT IS OBTAINED. THE USE OF THE ALTERNATE (OR "BACK") REGISTER SET ON THE Z80 IS UNUSUAL AND MAY CONFUSE AT FIRST. I USED THIS PROGRAMMING TECHNIQUE SO THAT ALL OF THE PARAMETERS ARE HELD IN ON-CHIP REGISTERS AND THE PROGRAM REALLY ZIPS ALONG.

THE PROGRAM STRUCTURE IS REALLY QUITE SIMPLE. THERE IS AN "OUTSIDE" TIMING LOOP (T1) CONTROLLING THE OVERALL TONE DURATION. (LINES 1050 TO 1280) THE LOOP COUNTER FOR THIS IS THE ALTERNATE HL' REGISTER. THIS REGISTER IS INITIALIZED IN LINE 1040 AND THE USE OF THIS ALTERNATE REGISTER REQUIRES THE FREQUENT USE OF THE EXX (EXCHANGE) INSTRUCTION. (LINES 1030, 1050, 1240 AND 1290).

THERE ARE TWO "INNER" TIMING LOOPS (T2 AND T3) LOCATED WITHIN THE "OUTER" ONE. THE FIRST OF THESE CONTROLS THE ON INTERVAL AND THE SECOND ONE CONTROLS THE OFF INTERVAL. REGISTER HL (MAIN REGISTER SET) IS THE LOOP COUNTER FOR EACH OF THESE LOOPS AND IS INITIALIZED IN LINES 1070 AND 1160 RESPECTIVELY. FOR EACH OF THE TIMING LOOPS FAMILIAR CODE FOR DECREMENTING AND TESTING FOR ZERO IS PROVIDED IN LINES 1250 TO 1280, 1110 TO 1140 AND 1200 TO 1230.

THE OTHER TWO PARAMETERS ARE ON INCREMENT AND OFF INCREMENT AND ARE LOADED INTO THE BC AND DE REGISTERS IN LINES 1010 AND 1020. THEY ARE UNMODIFIED DURING THE T1 LOOP. THE OTHER TWO PARAMETERS ARE ON INCREMENT AND OFF INCREMENT AND ARE LOADED INTO THE BC AND DE REGISTERS IN LINES 1010 AND 1020.

THEY ARE UNMODIFIED DURING THE T1 LOOP. THESE VALUES ARE SUMMED WITH THE HL REGISTER VALUE TO MODIFY THE DURATION OF THE T2 AND T3 LOOPS IN LINES 1080 AND 1170. THE INCREMENTED VALUES ARE PLACED BACK IN THE TABLE IN LINES 1090 AND 1180. IN THIS MANNER THE SOUND IS CONTINUOUSLY VARIABLE.

THE ONLY REMAINING SECTION OF THE CODE TO DISCUSS IS THE ACTUAL SWITCHING OF THE I/O LATCH LOCATED AT 6800H. A SUITABLE VALUE IS PLACED IN THE A REGISTER TO SWITCH THE APPROPRIATE PAIRS OF BITS TO CONTROL BOTH THE PIEZO SPEAKER AND THE CASSETTE PORT. (RECALL PART I OF THIS SERIES.) REMEMBER ALSO THAT THE PAIRS OF BITS MUST BE COMPLEMENTARY - I.E. ONE ON AND THE OTHER OFF. IN LINE 1060 THE A REGISTER IS SET TO A DECIMAL VALUE OF 36 DURING THE ON INTERVAL IN LOOP T2. THIS CORRESPONDS TO THE SPEAKER PAIR - BITS 0 AND 5 - BEING SET TO OFF/ON RESPECTIVELY AND THE CASSETTE PAIR - BITS 1 AND 2 - BEING SET TO OFF/ON.

IN LINE 1150, THE A REGISTER IS CHANGED TO A DECIMAL VALUE OF 3 DURING THE OFF INTERVAL IN LOOP T3. THIS CORRESPONDS TO AN INVERSION OF THE 2 PAIRS OF BITS TO ON/OFF. IN LINES 1100 AND 1190 THE VALUE IN THE A REGISTER IS WRITTEN TO THE I/O LATCH ADDRESS AND A RESULTING CLICK IS HEARD FROM THE SPEAKER OR RECORDED ON THE TAPE. THIS SEQUENCE IS REPEATED ACCORDING TO THE "OUTER" TIMING LOOP T1 BUT WITH LOOPS T2 AND T3 BEING MODIFIED ACCORDING TO THE ON AND OFF INCREMENT PARAMETERS. IN LINE 1300 AND 1310 THE A REGISTER IS ZEROED AND WRITTEN TO THE LATCH FOR AN ORDERLY RETURN TO BASIC.

AS I SAID, IT IS A PRETTY EASY PROGRAM TO FOLLOW AND IS A GOOD PRELIMINARY INTRODUCTION TO ASSEMBLY LANGUAGE TECHNIQUES - PARTICULARLY INTERFACING WITH THE SPEAKER AND CASSETTE HARDWARE.

SOME PARAMETERS TO TRY.

IT IS FUN TO PLAY AROUND WITH THE TONEGEN PROGRAM AND EXPERIMENT WITH THE EFFECT EACH PARAMETER HAS UPON THE RESULTING SOUND. TRY THE FOLLOWING:

100,100,0,0,1000	A SQUARE WAVE.
500,500,0,0,500	LOWER PITCHED SQUARE WAVE- LONGER LOOPS.
10,10,0,0,5000	HIGHER SQUARE WAVE.
10,0,0,0,10	10 CLICKS WITH VARIED DUTY CYCLE.
100,100,0,0,500	BUZZ.
200,20,0,0,1000	
20,20,10,10,200	
20,20,-32760,-32760,200	
1000,1,-1,1,1000	
5000,1,-10,10,500	
1,1,1,1,1000	
1,1,1,0,1000	

AND SO ON..... TRY AN VISUALIZE THE VALUES BEING PLACED INTO THE HL, HL', BC AND DE REGISTERS SO THAT THEY CAN BE RELATED TO THE SOUND PRODUCED.

ONE FINAL THING WITH THIS PROGRAM. AS YOU EXPERIMENT WITH IT, YOU WILL NO DOUBT PUT THE VZ INTO SOME VERY LONG LOOPS THAT CANNOT BE BROKEN OUT OF WITH THE BREAK KEY. A USEFUL ADDITION TO THE MACHINE LANGUAGE PROGRAM IS TO HAVE IT LOOK FOR THE BREAK KEY IN EACH OF THE LOOPS. HAVE A GO AT MAKING THE NECESSARY ALTERATIONS. ANOTHER METHOD IS TO USE THE INTERRUPT VECTOR TO INTERCEPT A KEY SEQUENCE TO RETURN TO BASIC AND REGAIN CONTROL.

WE HAVE INVESTIGATED AS FAR IS POSSIBLE IN THIS SERIES OF ARTICLES, THE SOFTWARE AND HARDWARE ASPECTS OF SOUND GENERATION ON THE VZ. I TRUST THAT YOU WILL USE SOME OF THE TECHNIQUES TO ENHANCE YOUR PROGRAMMING EFFORTS. I HOPE THAT Z80 ASSEMBLER IS BECOMING A LITTLE LESS MYSTIC ALSO.

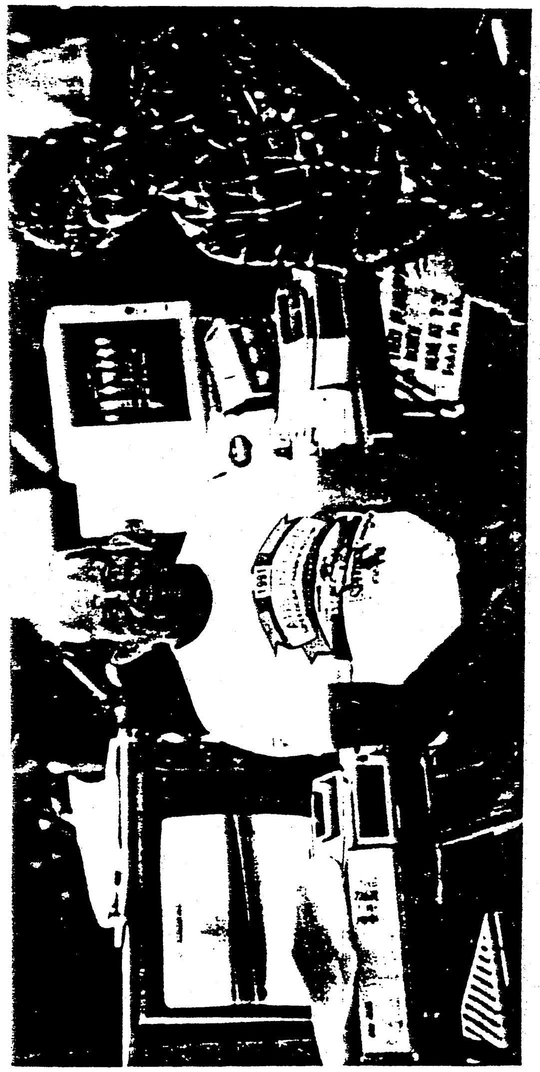
WESTERN AUSTRALIA VZ 200/300 (COMPUTER) USER'S GROUP

THE PHOTO SHOWS THE BIG BOYS OF WAVZ USER'S GROUP USING THEIR VZ SYSTEMS TO TABULATE THE SCORES OF THIS YEARS AUSTRALIAN SPEEDCAR'S CHAMPIONSHIPS AT CLAREMOUNT SPEEDWAY. GRAEME BYWATER ON THE LEFT AND REX GLADDING SHOW THAT THE HUMBLE VZ CAN BE USED FOR SERIOUS WORK AND NOT JUST A TOY FOR KIDS TO PLAY GAMES ON.

WELL DONE VZ'DERS . . .

WAVZ 200/300 (computer) Users' Group

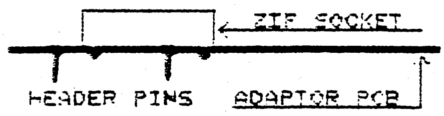
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1	NT	WARRENNE EKINS	2005	5
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51	NT	JEFF BLAKE	1702	5
34	WA	MIKE FIGIOMENI	1552	5
4	WA	GRAHAM JONES	1503	4
9	WA	WAYNE COVER	1350	5
23	SA	PHIL HERREEN	1219	5
21	WA	GEOFF STANTON	1189	5
29	WA	RON GLAZEBROOK	1089	5
50	WA	MARK DEROSA	1050	5
75	WA	TOM WATSON SNR	1032	5
31	WA	BRIAN FERRIS	967	5
10	WA	IAN WATTS	929	5
14	WA	NEVILE LANCE	926	3
77	WA	VINCE CHAPMAN	761	5
3	WA	COLIN TREMEER	711	5
69	WA	FERGIE DONALDSON	694	3
36	NSW	KEVIN CONDRON	631	5
54	VIC	SHANE SMITH	623	5
81	SA	GARY DILLION	596	3
27	WA	JOE LITTLE	571	5
8	WA	KEITH GILES	570	2
26	NT	BOB HOLT	550	4
15	WA	BILL YIANNOPOULOS	494	4
11	WA	KEITH MANN	391	3
88	VIC	ERIC SMITH	349	3
53	SA	TREVOR GREEN	225	1
17	WA	DAVE FULLGRABE	206	3
99	WA	COL THOMPSON	190	2
94	QLD	K. HUTTON	127	1
18	WA	JASON TREMEER	124	2
55	WA	IAN CATCHLOVE	95	1
2	WA	GEOFF PILGRIM	53	1
28	SA	BILL AHANG	53	1
			0	0
7	WA	RENAE WATSON	0	0
19	WA	TREVOR HENDERSON	0	0
24	QLD	ERIC MITCHELL	0	0
37	WA	REX MCKAY	0	0
40	WA	PAUL JORDAN	0	0
42	NT	JOHNNY DAVIDSON	0	0
47	NT	ALF STANAWAY	0	0
64	WA	HILTON MCGEE	0	0
65	WA	DENNIS SPARNON	0	0
96	WA	JEFF BRANCH	0	0



ETI 1611 VZ300 EPROM PROGRAMMER 34/10
UPDATE PART II BY H. NACINOVICH

DIP SWITCH SETTINGS

switch set	1	2	3	4	5	6	
2716	off	on	on	off	off	x	
2732	off	on	off	on	on	x	
27512	on	off	off	on	on	off	A15 : 1
						on	A15 : 0



x : don't care
Use DIP switch SW6 to manually set address bit A15 for 27512

TESTING ADAPTOR BOARD

* SWITCH OFF VZ300, PLUG IN ADAPTOR BOARD.
* SET ALL DIP SWITCHES OFF AND SWITCH ON VZ300.

IF ALL OK, NORMAL DISPLAY WILL APPEAR. IF NOT, SWITCH OFF IMMEDIATELY AND CHECK FOR FAULTS.

THE FOLLOWING IS A SUGGESTED TEST PROCEDURE. YOU MIGHT LIKE TO SET IT UP AS A PROGRAM IN BASIC, COMPLETE WITH PROMPTS, ETC TO INDICATE WHICH SWITCHES TO SET ON/OFF AND WHICH VOLTAGES TO MEASURE.

* INITIALISE PIO BOARD AS FOLLOWS:
  OUT 203,7:OUT 203,15:OUT 201,7:OUT 201,143
* SET SW1 ON AND ENTER: A = PEEK(-16384)
* MEASURE PIN 26 VOLTAGE. SHOULD READ BETWEEN 2.5V AND 5V.
* ENTER: A = PEEK(-1)
* MEASURE PIN 26 VOLTAGE. SHOULD READ 0V.
* SET SW1 OFF; SW2 ON.
* MEASURE PIN 26 VOLTAGE. SHOULD BE 5V, +/-0.5V.
* SET SW3 ON AND ENTERD: OUT 202,24
* MEASURE PIN 23 VOLTAGE. SHOULD BE 21V. IF SWITCH AND TRIMPOT ADDED TO MAIN BOARD FOR 25V MODIFICATION, SET SWITCH TO 25V AND ADJUST TRIMPOT FOR 25V.
* ENTER: OUT 202,32
* MEASURE OIN 23 VOLTAGE. SHOULD BE 0V
* SET SW3 OFF; SW4 ON.
* ENTER: A = PEEK(-16384)
* MEASURE PIN 23 VOLTAGE. SHOULD BE 0V.

* ENTER: A = PEEK(-1)
* MEASURE PIN 23 VOLTAGE. SHOULD BE BETWEEN 2.5V AND 5V.
* SET SW5 ON.
* ENTER: OUT 202,24
* MEASURE PIN 22 VOLTAGE. SHOULD BE 25V.

IF VOLTAGE IS GREATER THAN, SAY 15V AND LESS THAN 25V IT COULD BE THAT INVERTER ON MAIN BOARD CANNOT DRIVESUFFICIENT CURRENT (16.7MA) INTO R8 TO GENERATE 25V. INCREASING NUMBER OF SECONDARY TURNS ON FERRITE CORE MAY BE NEEDED TO SOLVE PROBLEM.

* ENTER: OUT 202,0
* MEASURE PIN 22 VOLTAGE. SHOULD BE BETWEEN 2.5V AND 25V.
* ENTER: OUT 202,2
* MEASURE PIN 22 VOLTAGE. SHOULD BE 0V. IF NOT REPLACE ZD1 WITH 6V8 ZENER.
* MEASURE PIN 1 VOLTAGE. SHOULD BE 0V.
* SET SW6 ON.
* MEASURE PIN 1 VOLTAGE. SHOULD BE 5V. +/- 0.5V.

THE FOLLOWING ARE SOME SOFTWARE CODES AND THE CORRESPONDING PIN VOLTAGES MEASURED ON THE ZIF SOCKET.

HIGH = 2.5V to 5V; LOW = 0V to 0.4V

DIP SWITCH SET FOR 2716 (MOTOROLA)

CODE SENT TO PIO PORT 3 (OUT 202,xx) — ZIF pin number

xx	20 (CE)	22 (OE)	23 (Vpp)	26 (Vcc)
30H	LOW	HIGH	0V	5V
38H	LOW	HIGH	25V	5V
39H	HIGH	HIGH	25V	5V
30H	LOW	HIGH	0V	5V
32H	LOW	LOW	0V	5V

DIP SWITCH SET FOR 27C16 (NATIONAL SEMICONDUCTOR)

CODE SENT TO PIO PORT 3 (OUT 202,xx) — ZIF pin number

xx	20 (CE)	22 (OE)	23 (Vpp)	26 (Vcc)
61H	HIGH	HIGH	0V	6V
69H	HIGH	HIGH	12.5V	6V
68H	LOW	HIGH	12.5V	6V
68H	HIGH	LOW	12.5V	6V

DIP SWITCH SET FOR 2732

CODE SENT TO PIO PORT 3 (OUT 202,xx) — ZIF pin number

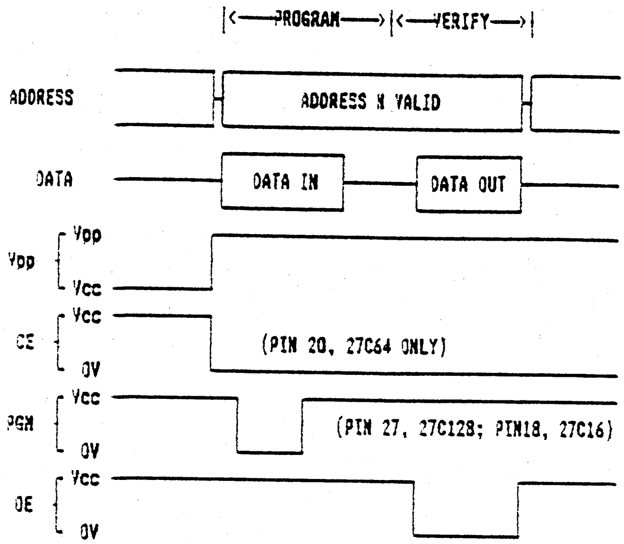
xx	20 (CE)	22 (OE/Vpp)	23 (A11)	26 (Vcc)
33H	HIGH	0V	-	5V
39H	HIGH	25V	-	5V
30H	LOW	25V	-	5V
3AH	LOW	0V	-	5V

DIP SWITCH SET FOR 27512

CODE SENT TO PIO PORT 3 (OUT 202,xx) — ZIF pin number

xx	20 (CE)	22 (OE/Vpp)	23 (A11)	26 (Vcc)	27 (A14)
33H	HIGH	0V	-	5V	LOW
37H	HIGH	0V	-	5V	HIGH
39H	HIGH	25V	-	5V	LOW
3DH	HIGH	25V	-	5V	HIGH
38H	LOW	25V	-	5V	LOW
3CH	LOW	25V	-	5V	HIGH
3AH	LOW	0V	-	5V	LOW
3EH	LOW	0V	-	5V	HIGH

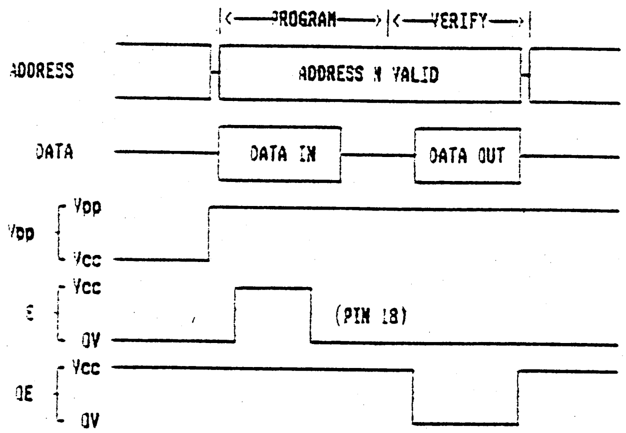
PROGRAMMING WAVEFORMS (NMC27C168 AND NMC27C64)



NMC27C168 and NMC27C64 (NATIONAL SEMICONDUCTOR)

Vpp programming supply voltage ....12.2V to 13.3V)
Ipp programming pulse supply current ....30mA max
Tpw programming pulse width (pin 18) ..... 0.5mS min.; 10mS Max.
Tas address set up time .... 2uS min
(address stable to pin 18 low)
Tah address hold time ....2uS min
(pin 18 high to address 'don't care')
Tds data setup time ....2uS min
(data stable to pin 18 low)
Tdh data hold time ....2uS min
(pin 18 high to data 'don't care')

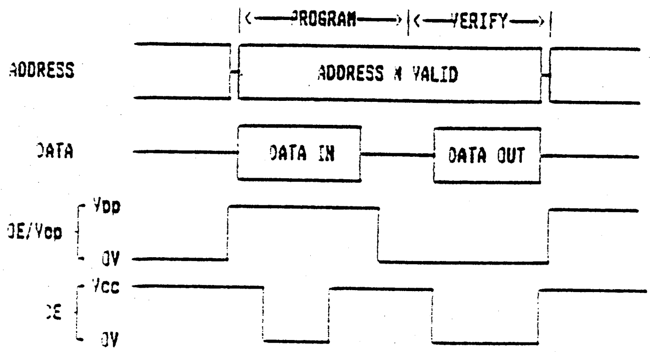
PROGRAMMING WAVEFORMS (MCM2716 - MOTOROLA)



MCM2716 (MOTOROLA)

Vpp programming supply voltage ....25V +/-1V
Ipp programming pulse supply current ....30mA max
Tpw programming pulse width (pin 18) ..... 1mS min.; 56mS Max.
Tas address set up time .... 2uS min
(address stable to pin 18 high)
Tah address hold time ....2uS min
(pin 18 low to address 'don't care')
Tds data setup time ....2uS min
(data stable to pin 18 high)
Tdh data hold time ....2uS min
(pin 18 low to data 'don't care')

PROGRAMMING WAVEFORMS (NMC27C328 AND NMC27C512)



NM27C328 AND NMC27C512 (NATIONAL SEMICONDUCTOR)

Vpp programming supply voltage ....12.2V to 13.3V)
Ipp programming pulse supply current ....30mA max
Tpw programming pulse width (CE)......... 0.5 mS min.; 10mS Max.
Tas address set up time .... 2uS min
(address stable to CE low)
Tah address hold time ....2uS min
(CE high to address 'don't care')
Tds data setup time ....2uS min
(data stable to CE high)
Tdh data hold time ....2uS min
(CE low to data 'don't care')

EPROM COMPARING PROGRAMS NEXT ISSUE

MODS TO DSE. DISC DATABASE PART III BY JOHN D'ALTON

PART 2 OF THIS SERIES WAS CALLED "2. ALTER THE SYSOP DATA" AND WAS PRINTED IN THIS JOURNAL # 32.

3. SEARCH ON ANY FIELD - ALL THE FIELD

<u>THIS MODIFICATION DEPENDS ON MOD #2.</u>

THE ORIGINAL PM DB ALLOWS SEARCHING ON THE FIRST FIELD AND ANY FIELD AS SELECTED BUT ONLY OF THE FIRST FOUR CHARACTERS OF THAT FIELD. WITH THIS MOD THE SEARCH IS CARRIED OUT ON THE WHOLE FIELD, NOT JUST THE FIRST FOUR CHARACTERS.

E.I. IF YOU SEARCH FOR "SMITH" IN THE WORD "GRANNYSMITH" YOU WOULD TYPE IN SAY, "NYSM". THIS WOULD ELIMINATE OTHER DATA ON THE FILE SUCH AS "GRANNYLADY" OR "OLDSMITH". IF YOU TYPED IN "SMIT" OR "MITH", RECORDS WITH "GRANNYSMITH" AND "OLDSMITH" WOULD APPEAR.

THE SEARCH IS CARRIED OUT ALL THE WAY ALONG THE FIELD WHICH IS DONE IN LINES 2140 TO 2180. A SPACE CAN BE INCLUDED IN THE FOUR CHARACTERS BUT ONLY IF PRECEEDED BY A CHARACTER OR FOLLOWED BY A CHARACTER. EI. IN "BOB JONES" "OB J" OR "B JO".

IF YOUR PM DB VERSION CONTAINS THE OPTION TO PRINT THE DATA FOUND ONTO A PRINTER AS ON LINES 2120 TO 2143 THEN I SUGGEST YOU SHIFT THAT SECTION AND GOTO IT IF YOU WISH.

MY MOD #4 PRINT FIELD IN ANY ORDER DOES A MORE VERSATILE JOB WHICH I WILL PRESENT LATER.

NOW THE MODS:

ALTER OR ADD LINES 2000, 2140 TO 2180.

DELETE LINE 2145.

```
2000 I=0:YE=0:CLS:PRINT"     *** SEARCH OPTIONS ***      "


2140 CLS:PRINT"WHICH FIELD TO SEARCH ? <2-";N;">":INPUTX1
2150 J=X1:PRINT"INPUT FIRST 4 CHAR OF ";FN$(J);" TO SEARCH FOR"
2152 INPUTS$:XX=LP(J):IFFL(J)=1THENGOSUB1110ELSE2155
2153 GOTO2000
2155 IFLEN(S$)<4THENS$=S$+" ":GOTO2155
2156 FORI=1TOR
2158  X=1:FORJ=1TOX1-1:X=1+(X+FL(J)):NEXTJ
2172  FORL=XTO(X+20)
2173 ST$=MID$(L$(I),L,4)
2176 IFS$=ST$THENGOTO2179ELSE2177
2177  NEXTL
2178    GOTO2180
2179 CLS:GOSUB9160:GOSUB9200:SOUND15,1:  I=I+1:     GOTO2158
2180 NEXTI:GOSUB9250:GOTO2000
```

4. PRINT FIELDS IN ANY ORDER:

<u>THIS MODIFICATION DEPENDS ON MOD #2.</u>

MODS TO DSE DISC D'BASE CONT.

THIS ALLOWS YOU TO SELECT THE AMOUNT OF FIELDS AND IN WHICH ORDER TO BE PRINTED ON A PRINTER. YOU WOULD USE THIS MODIFICATION TO PRINT OUT ALL THE RECORDS IF REQUIRED ALTHOUGH YOU CAN EXIT AT ANY TIME AS ON LINES 9260 AND 9264.

MOVE THE EXISTING PRINT SECTION ON LINES 3000 TO 3040 TO 3080 AND 3083.
THE NEW PRINT MENU IS ON LINES 3000 TO 3027.
ADD THE NEW SUBROUTINE ON LINES 11300 TO 11460.
ADD THE SUBROUTINE ON LINES 9470 AND 9472.
ADD THE SUBROUTINE ON LINES 11200 TO 11226.
THIS SECTION SHOWS ON THE VDU THE NAMES OF THE FIELDS AND THE FIELD NUMBERS. YOU THEN SELECT HOW MANY FIELDS TO BE PRINTED.
LINE 11340 PROMPTS YOU TO SELECT THE FIELDS.
ADD THE NEW SUBROUTINE ON LINES 11230 TO 11254. THIS SECTION CALCULATES THE PART OF THE RECORD (FIELD) BY MID$ TO BE PRINTED.
ADD LINES 9260 TO 9300.

THE VARIOUS PRINTER COMMAND CODES ARE FOR MY CITIZEN 120D PRINTER AND MAY HAVE TO BE CHANGED TO SUIT YOUR PRINTER. I SUGGEST YOU TRY THE MODS OUT FIRST AND THEN ALTER THE CODES TO SUIT IF NECESSARY.

THE SUBROUTINES ON LINES 11200 TO 11254 ALLOW UP TO SIX FIELDS TO BE SELECTED/PRINTED. YOU CAN ADD MORE IF REQUIRED JUST BY TYPING IN MORE. LP(7), LP(8) AND SO ON.

THESE TWO SUBROUTINES ARE USED BY ANOTHER ONE OF MY MODS WHICH ALLOWS SORTING ON ANY FIELD. MORE OF THIS ANOTHER TIME.

GO TO IT, I HOPE THE MODS WORK FIRST TIME FOR YOU.
JOHN D'ALTON. FEB 1991.

```
3000 REM PRINT SELECTED FIELD/S
3010 CLS:PRINT"   PRINT MENU"
3012 PRINT:PRINT"<1> = PRINT ALL":PRINT"<2> = SELECTED FIELD/S"
3020 PRINT:PRINT"SELECT "
3025 IFINKEY$="1"THENGOSUB3080
3026 IFINKEY$="2"THENON$="PRINT":GOSUB11300:GOTO500
3027 GOTO3025
```

```
9260 REM E TO EXIT
9264 PRINT" HOLD <E> TO EXIT":K$=INKEY$:I$=INKEY$:RETURN
```

```
9470 REM LPRINT----
9472 FORZ=1TO80:LPRINT"=";:NEXT:RETURN:END
```

```
11200 REM SELECT FIELD
11210 PRINTON$;"  ";FN$(1);"    <1>"
11212 PRINTON$;"  ";FN$(2);"    <2>"
11214 PRINTON$;"  ";FN$(3);"    <3>"
11216 PRINTON$;"  ";FN$(4);"    <4>"
11218 PRINTON$;"  ";FN$(5);"    <5>"
11220 PRINTON$;"  ";FN$(6);"    <6>"
11226 RETURN
```

```
11230 REM GET MID$
11242 IFQ=1THENLP=LP(1):FL=FL(1)
11244 IFQ=2THENLP=LP(2):FL=FL(2)
11246 IFQ=3THENLP=LP(3):FL=FL(3)
11248 IFQ=4THENLP=LP(4):FL=FL(4)
11250 IFQ=5THENLP=LP(5):FL=FL(5)
11252 IFQ=6THENLP=LP(6):FL=FL(6)
11254 SOUND10,1:   RETURN:END


11300 REM PRINT SUB
11320 X=0
11325 PRINT"SWITCH PRINTER ON":INPUT"PRESS RETURN TO CONT";Q$
11326 PRINTM1$:GOSUB9470
11327 INPUT"TYPE DATE & NOTE";Q4$:LPRINT;Q4$:LPRINT:GOSUB9470
11330 INPUT"CONDENCED PRINT Y/N ";Q2$:IFQ2$="Y"THENQ2=1ELSEQ2=0
11334 CLS:GOSUB11200:PRINTM1$
11335 INPUT"HOW MANY FIELDS  MAX 5 ";Q1
11337 IFQ2=1THENLPRINTCHR$(15)
11338 FORXX=1TOQ1
11340 INPUT"SELECT FIELD 1 TO 6 ";Q:X=X+1:GOSUB11230
11344 PP(XX)=LP:PL(XX)=FL
11350 NEXTXX
11353 FORI=1TOR:P1$=""
11355 FORXX=1TOQ1
11360 A1$(XX)=MID$(L$(I),PP(XX),PL(XX))
11386 P1$=P1$+"  "+A1$(XX)
11390 NEXTXX
11405 CLS:GOSUB9260:IFI$="E"THEN11440ELSE11420
11420 LPRINT:P1$
11430 NEXTI
11440 LPRINTCHR$(18):GOSUB9470:LPRINT
11460 GOTO500
```

VZ NSW LOTTO SELECTOR
BY PAUL AND JOE LEON

THE FRONT COVER SHOWS ABOUT ALL. MENU SCREEN, GAME ENTRY SCREEN, 12 GAMES OF SYSTEM 6 AND DATA SAVING SCREEN. ERROR TRAPPING HAS BEEN USED TO STOP PLAYING AN INVALID GAMES/SYSTEM COMBINATION OR ACTIVATE A FUNCTION WITH NO GAME/S IN MEMORY. YEAR/WEEK ENTRY IS OPTIONAL.

IN SOME LARGER SYSTEM/GAME COMBINATIONS THE NUMBERS ARE DISPLAYED OVER 2 SCREENS. DUE TO THE LIMITATIONS OF THE DOS ONLY ONE DATA FILE PER DISK SIDE CAN BE STORED (MORE ON IT NEXT ISSUE). IN THE DISK SAVE/LOAD ROUTINES I'VE INCLUDED INFO ON DATA SAVING/LOADING AND IT'S DISPLAYED BY 4 LOTS OF NUMBERS WHICH ARE FROM LEFT:

1) NUMBER OF GAMES SELECTED
2) LOTTO SYSTEM SELECTED
3) INCREMENTING SAVE/LOAD GAME NO.
4) DATA BEING SAVED/LOADED.

IT SHOULD GIVE YOU AN INSIGHT ON HOW DATA IS STORED ON DISK. OTHER ROUTINES WHICH MAY BE DESIREABLE LIKE LETTING THE VZ COMPARE WINNING NUMBERS AGAINST YOUR GAME/S AND INFORM IF A WIN OR WINS ARE DETECTED. THIS PROGRAM COULD BE UPGRADED TO INCLUDE POOLS OR CHANGED FOR DIFFERENT STATE LOTTO SYSTEMS. TAPE CHANGES IN NEXT ISSUE.

PROGRAM ON NEXT TWO PAGES:

. . . CONTINUED NEXT ISSUE . . .

VZ NSW LOTTO SELECTOR CONT.

```
10  GOTO800:REM VZ NSW LOTTO SELECTOR (EXPANDED MARK SIX)
12 :
14 REM RESERVED
78 :
80 CLS:PRINT VZ$
82 PRINT@ 3,USING F1$;YR
84 PRINT@29,USING F2$;WK;
86 RETURN
88 :
90 PRINT@484,SP$;:SOUND 25,1
92 I$="":I$=INKEY$:I$=INKEY$:IF I$=""THEN 92 ELSE X=USR(X)
94 IF I$=" "THEN RETURN ELSE RETURN
98 :
100 GOSUB 90:IF I$<>" "THEN 900:REM...:LOTTO INPUT ROUTINES
102 GOSUB 80:PRINT@97,"ENTER YEAR NO ....91-99 ";
104 SOUND 0,2:INPUT YR:IF YR=0 THEN 108
106 IF YR<91 OR YR>99 THEN 102
108 PRINT@3,USING F1$;YR
114 :
116 PRINT@161,"ENTER WEEK NO ....1-200 ";
118 INPUT WK:IF WK=0 THEN 122
120 IF WK<1 OR WK>200 THEN 116
122 PRINT@29,USING F2$;WK
124 RETURN
126 :
130 GOSUB 100:PRINT@225,"ENTER SYSTEM NO. . 6-18 ";
132 INPUT SN:IF SN=0 THEN 900
134 IF SN<6 OR SN >18 THEN 130
138 :
150 IF SN=6 THEN PRINT@289,"NO OF GAMES 4,6,8,10,12 ";
152 IF SN>6 THEN PRINT@289,"ENTER NO. OF GAMES 1-10 ";
154 INPUT NG:IF NG=0 THEN 900 ELSE IF SN>6 THEN 200
156 IF NG=4 OR NG=6 OR NG=8 OR NG=10 OR NG=12 THEN 200 ELSE 150
158 :
200 GOSUB 90:IF I$<>" "THEN 900:REM....:RANDOM NUMBER ROUTINE
205 GOSUB 80:PRINT
210 FOR G=1 TO NG:FOR I=1 TO SN
215 A(G,I)=RND(44):IF I=1 THEN 230
220 FOR J=1 TO I-1
225 IF A(G,I)=A(G,J) THEN 215
230 NEXT:NEXT
245 :
250 FOR I=1 TO SN:FOR J=1 TO SN-I:REM..;BUBBLE SORT ROUTINE
255 IF A(G,J)<A(G,J+1) THEN 265
260 B=A(G,J):A(G,J)=A(G,J+1):A(G,J+1)=B
265 NEXT J,I:GOTO 310
295 :
300 GOSUB 80:PRINT:REM.................:DISPLAY NUMBERS ROUTINE
305 FOR G=1 TO NG
310 IF G=7 AND SN>9 GOSUB 90:CLS:GOSUB 80:PRINT
315 PRINT"#";USING"##";G;:PRINT":";
320 FOR J=1 TO SN:PRINT TAB(1)"";
325 IF J=10 THEN PRINT"     ";:REM 5 SPACES
330 PRINT USING" ##";A(G,J);
335 NEXT J:PRINT
340 NEXT G:POKE 30777,35
345 GOSUB 90:GOTO 900
395 :
```

VZ NSW LOTTO SELECTOR CONT.

```
400 GOSUB 90:IF I$<>" "THEN 900:REM....;LPRINT NUMBERS ROUTINE
405 LPRINT"YR ";:LPRINT USING F1$;YR;:LPRINT VL$;
410 LPRINT" WK ";:LPRINT USING F2$;WK:LPRINT
415 FOR G=1 TO NG:FOR J=1 TO SN
420 LPRINT TAB(1)"";
425 LPRINT USING" ##";A(G,J);
430 NEXT J:LPRINT:NEXT G
435 LPRINT:LPRINT:GOTO 950
495 :
500 GOSUB 90:IF I$<>" "THEN 900:REM....:DISK SAVE ROUTINE
505 IF I$<>" "THEN 900 ELSE GOSUB 80:IF A$="S" THEN 515
510 PRINT@417,"[illegible] DATA >":ERA"DATA":SOUND 25,1
515 PRINT@400,"GN SN   GN DATA"
520 PRINT@417,"[illegible] DATA >";:PRINT@431,USING F3$;NG;SN;
525 OPEN"DATA",1:PR#"DATA",YR,WK,NG,SN
530 FOR I=1 TO NG:FOR J=1 TO SN
535 PRINT@439,USING F3$;I;A(I,J);
540 PR#"DATA",A(I,J):NEXT J,I
545 CLOSE"DATA"
550 GOSUB 90:GOTO 900
595 :
600 GOSUB 90:IF I$<>" "THEN 900:REM....:DISK LOAD ROUTINE
605 GOSUB 80:PRINT@400,"GN SN   GN DATA";
610 PRINT@417,"[illegible] DATA >";
615 OPEN"DATA",0
620 IN#"DATA",YR,WK,NG,SN:GOSUB 82
625 PRINT@431,USING F3$;NG;SN;
630 FOR I=1 TO NG:FOR J=1 TO SN
635 IN#"DATA",A(I,J)
640 PRINT@439,USING F3$;I;A(I,J);
645 NEXT J,I
650 CLOSE"DATA"
655 GOTO 300
695 :
700 REM RESERVED
795 :
800 CLEAR 400:DIM A(12,18):REM.........:DECLARE VARIABLES, ETC
805 VZ$="YR    [illegible] WK":F1$="##":F2$="###"
810 VL$="VZ LOTTO SELECTOR":F3$=" ##"
815 SP$="PRESS [illegible] TO CONTINUE"
820 POKE 30862,80:POKE 30863,52
895 :
900 GOSUB 80:POKE 30744,0:POKE 30777,1
904 PRINT@108,"N)EW":PRINT@140,"R)EPEAT":PRINT@172,"D)ISPLAY"
908 PRINT@204,"Y)YR/WK":PRINT@268,"P)RINT"
912 PRINT@332,"L)OAD":PRINT@364,"S)AVE":PRINT@396,"U)PDATE"
916 SOUND 25,1
948 :
950 A$="":A$=INKEY$:A$=INKEY$:IF A$="" THEN 950 ELSE X=USR(X)
954 IF SN=0 OR G=0 THEN CK=0 ELSE CK=1
958 IF A$="Y" PRINT@204,"[illegible]":GOSUB 100:GOTO 900
962 IF A$="N" PRINT@108,"[illegible]":GOTO 130
966 IF A$="R"AND CK=1 PRINT@140,"[illegible]":GOTO 200
970 IF A$="D"AND CK=1 THEN 300
974 IF A$="P"AND CK=1 PRINT@268,"[illegible]":GOTO 400
978 IF A$="S"AND CK=1 PRINT@364,"[illegible]":GOTO 500
982 IF A$="U"AND CK=1 PRINT@396,"[illegible]":GOTO 500
986 IF A$="L" PRINT@332,"[illegible]":GOTO 600
996 GOTO 950
998 :
```

** ** NEW — FOR SALE — NEW ** **

** ** VZ DISK FILER (CATALOGUER) ** **

IF YOU HAVE TROUBLE FINDING SOME OF YOUR PROGRAMS THEN THIS NEW DISK CATALOGUEING UTILITY BY DAVE MITCHELL MIGHT BE JUST WHAT THE DISK DOCTOR ORDERED. DISK FILER IS A DATABASE THAT WILL READ, SORT & PRINT YOUR DISK DIRECTORIES. FINDING ANY FILE WILL BE AS EASY AS LOOKING AT AN INDEX. SEE PAGE 10 FOR A PREVIEW.

APPROX. PRICE: $25.00-$30.00

FOR MORE INFORMATION CONTACT:

DAVE MITCHELL 24 ELPHINSTONE STREET NORTH ROCKHAMPTON 4701
PHONE (079) 278 519

** ** VZ DISASSEMBLER ** **

WHAT, ANOTHER DISASSEMBLER? BUT, YOU HAVE ALREADY GOT ONE? THIS ONE IS DIFFERENT!

THIS PROGRAM IS ENTIRELY WRITTEN IN MACHINE CODE. IT ACTUALLY RUNS ABOUT 40 TIMES FASTER THAN D.S.E.'S DISASSEMBLER (OR ANY ONE ELSE'S). IT WILL DISASSEMBLE ANY PROGRAM THAT YOU CAN BLOAD INTO MEMORY. IT WORKS WITH ANY VZ CONFIGURATION. IT DISASSEMBLES EVEN THE 88 EXTRA Z80 OPCODES THAT ZILOG DOESN'T ADMIT TO.

PRICE? ONLY $25.00: TAPE AND DISK VERIONS AVAILABLE.

PRICE INCLUDES HARDCOPY MANUAL. INTERESTED? YOU MAY PURCHASE THIS PROGRAM FROM PETER HICKMAN, FOR ADDRESS SEE BELOW.

** ** VZ MODEM SOFTWARE ** **

DID YOU WANT TO TALK TO OTHER COMPUTERS VIA A MODEM? DID YOU BUY THE DSE TERMINAL EPROM, ONLY TO DISCOVER THAT IT ONLY WORKS WITH TAPE. IT ONLY ALLOWS YOU TO PRINT FILES, NOT SAVE THEM OR SEND THEM!

YOUR PROBLEMS ARE SOLVED! THE HICKMAN BROTHERS, PETER AND ANDREW, HAVE A BRAND NEW PROJECT WHICH WILL ALLOW YOU TO SEND, RECEIVE & SAVE FILES VIA A MODEM. IT WORKS WITH DISK!

SALE PRICE: $25.00 ONLY

INCLUDED ARE INSTRUCTIONS FOR THE HARDWARE MODIFICATIONS.

A SMALL MODIFICATION IS NEEDED TO YOUR DISK CONTROLLER. YOUR USER GROUP MAY HELP YOU MODIFY YOUR COMPUTER TO USE THIS EXCITING NEW SOFTWARE! IF YOU HAVE THE FUNCTION KEYS MOD AS WELL, THEN YOU WILL BE ABLE TO SEND EXTRA ASCII CHARACTERS SUCH AS:-

{ | } ~ _

THE MANUAL IS SUPPLIED ON DISK FOR YOU TO PRINT OUT WITH YOUR DISK VERSION OF E & F WORDPROCESSOR. IF YOU DO NOT OWN AN E & F WORDPROCESSOR PROGRAM, PLEASE ENCLOSE ANOTHER $5.00 (TOTAL $30.00) FOR PHOTOCOPYING AND POSTAGE OF THE MANUAL.

FOR PURCHASE OR INFORMATION CONTACT:

PETER HICKMAN PO. BOX 8 WERRING[illegible] NSW 2747

FOR SALE E & F W.P. PATCH 3.3

PATCH 3.3 WRITTEN BY DAVE MITCHELL WILL CONVERT YOUR E & F TAPE WORD PROCESSOR FOR FULL DISK USE WHILE RETAINING ALL ORIGINAL FUNCTIONS. BELOW ARE ADDED DISK COMMANDS & FUNCTIONS :-

LOAD, SAVE, ERASE, RENAME, DIRECTORY, INITIALIZE, UPDATE, DRIVE 1 & 2, SOFTWARE SHIFTLOCK & IMBEDDED PRINTER CONTROL CODES PLUS CTRL+P WHICH BYPASSES PRINT MENU AND PRINTS TO SCREEN OR PRINTER. A ROUTINE IS ALSO PROVIDED TO CONVERT YOUR BASIC PROGRAM OR SOURCE CODE FILES INTO WORD PROCESSOR FILES.

PATCH 3.3 HAS PROVISION FOR FAST SAVING AND LOADING OF TEXT DATA TO AND FROM DISK USING BLOCK SAVE/LOAD TECHNIQUES. PRINTER CONTROL CODES CAN BE SAVED TO TAPE OR DISK ALONG WITH YOUR TEXT.

BSTWP.F - THIS UTILITY PROVIDED WITH PATCH 3.3 WILL CONVERT BASIC PROGRAMS AND ED/ASS. SOURCE CODE FILES INTO WORD PROCESSOR FILES.

SYSTEM REQUIREMENTS - VZ 300 + 16K RAM PACK - VZ 200 + 26K

PATCH 3.3 IS COPYRIGHT TO AND ONLY AVAILABLE FROM :-
HUNTER VALLEY VZ USERS' GROUP P.O.BOX 161 JESMOND 2299
N.S.W. AUSTRALIA - PHONE JOE LEON (049) 51 2756

PRICE - AUS/NZ AU$20.00 - UPDATE - AUS-$10.00 - NZ-AU$11.00.
UPDATING AVAILABLE ONLY TO PREVIOUS PURCHASERS OF PATCHES.

FOR MORE INFORMATION WRITE TO H.V.VZ.U.G. ENCLOSING A SSAE.

EXTENDED DOS V1.3 - $15.00

UPDATED VERSION WITH EXTRA COMMANDS ADDED :-

OLD COMMANDS - MERGE, DIRA, LDIRA, DIRB, LDIRB, OLD, OLD., DEC, HEX, STATUSA AND LSTATUSA. STATUSA AND LSTATUSA ALSO WORKS WITH VERSION 1.0 DOS.

NEW COMMANDS :-

MENU - LOADS AND RUNS BINARY OR TEXT MENU PROGRAM FROM DISK.
CODE - SIMPLIFIES USING PRINTER CONTROL CODES DIRECTLY OR FROM WITHIN A PROGRAM.
LTAB - IS FOR SETTING OF LEFT MARGIN.
MOVE - MOVES BASIC FILE FROM DISK TO CHOSEN MEMORY ADDRESS.
UPD - ERASES OLD FILE AND SAVES WITH SAME FILE NAME.

MENU/FILE COPIER - $15.00

THIS UTILITY WILL READ YOUR DISK DIRECTORY AND PRESENT YOU WITH SEVERAL OPTIONS.... USING THE CURSOR YOU CAN RUN/BRUN ANY PROGRAM OR SELECT FILE COPY, REN[illegible] ERASE, DRIVE 1 OR 2.. ETC. BESIDES COPYING TEXT AND BINARY FILES ALL OTHER FILES CAN BE COPIED AS WELL EXEPT FOR DATA FILES.

FOR PURCHASE OR INFORMATION CONTACT DAVE MITCHELL - (079) 27 8519
24 ELPHINSTONE ST. NORTH ROCKHAMPTON QUEENSLAND 4701

FOR INFORMATION OR DEMONSTRATION IN NEWCASTLE AREA CONTACT :-
JOE LEON - (049) 51 2756 22 DRURY STREET WALLSEND NSW 2287

NOTE: ALL PRICES INCLUDE POSTAGE:

CONTRIBUTIONS TO THE JOURNAL:

IF YOU ARE THINKING OF CONTRIBUTING TO THE JOURNAL THE PREFERED FORMAT IS BASIC LISTINGS, WORD PROCESSOR OR SOURCE CODE FILES ON TAPE OR DISK. FILES FROM THE FOLLOWING WORD PROCESSORS CAN BE ACCEPTED :-

E & F TAPE OR DISK PATCH 3.1-3.3, WORDPRO CARTRIDGE, WORDPRO PATCH, MOST SOURCE CODE FILES AND ALL QUICKWRITE WORD PROCESSOR FILES.

** CLUB MEETINGS - ALL WELCOME **

FIRST FRIDAY OF MONTH - NO MEETING IN JANUARY 1991

VENUE - JESMOND NEIGHBOURHOOD CENTRE MORDUE PARADE JESMOND
(REAR STOCKLAND MALL - BIG W)

APRIL 5 - BASIC - MACHINE CODE & ASSEMBLY CONTINUED . . .

MAY 3 - BASIC - MACHINE CODE & ASSEMBLY CONTINUED . . .

JUNE 7 - ELECTION OF NEW COMMITTEE ? ? ?
DECISIONS ON FUTURE DIRECTION OF CLUB . . .
(WILL NOT AFFECT JOURNAL)

FUTURE DEMONSTRATIONS -

EPROM PROGRAMMER & ERASER, AUCTION NIGHT - USING THE VZ, RITTY, ETC. IF YOU HAVE ANY IDEAS FOR A DEMONSTRATION OR A SUBJECT THEN PLEASE LET YOUR COMMITTEE KNOW SO WE CAN ORGANIZE IT IF POSSIBLE.

CLUB COMMITTEE & SUBSCRIPTIONS -

PRESIDENT --------- ROSS WOODS --- (049) 71 2843
SECRETARY/EDITOR -- JOE LEON ----- (049) 51 2756
TREASURER --------- GARY BULLEY -- (049) 54 7561
COMMITTEE MEMBERS - COLIN BRIDGE - PETER JONES

SUBSCRIPTION TO - AUST. - 3 ISSUES $11.00 - 6 ISSUES $21.00
H.V.VZ.JOURNAL - N. Z. - 3 ISSUES $13.00 - 6 ISSUES $26.00

HUNTER VALLEY VZ USERS' GROUP - PO BOX 161 JESMOND 2299
NSW AUSTRALIA

NOTE: PRICES INCLUDE POST & PACKING

VZ USER GROUPS & PUBLICATIONS --

VZ DOWN UNDER - VZ MAGAZINE - 6 ISSUES - $18.00 PER ANUM
HARRY HUGGINS 12 THOMAS SREET MITCHAM VICTORIA 3132

WAVZ - WESTERN AUSTRALIA VZ USER GROUP
GRAEME BYWATER P O BOX 388 MORLEY W A 6062

BRISBANE VZ USERS WORKSHOP - C/O 63 TINGALPA ST. WYNUM WEST 4178
SOFTWARE FOR SALE - DISK MENU

SAPPHIRE PRODUCTIONS - VZ DISK MAGAZINE - $20.00 PER ANUM
CONTACT JASON OAKLEY PO BOX 600 TAREE NSW 2430

NOTE: WHEN WRITING TO ANY ABOVE OR H.V.VZ. USERS' GROUP FOR INFORMATION PLEASE ENCLOSE A S.S.A.E. OR NZ 2 INT. REPLY COUPONS.